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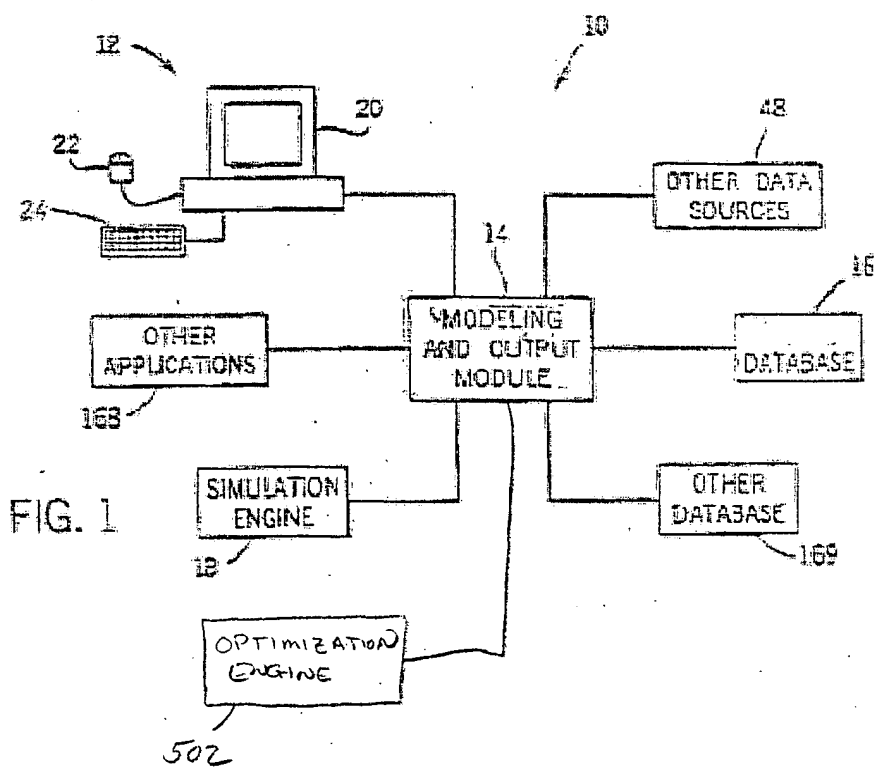
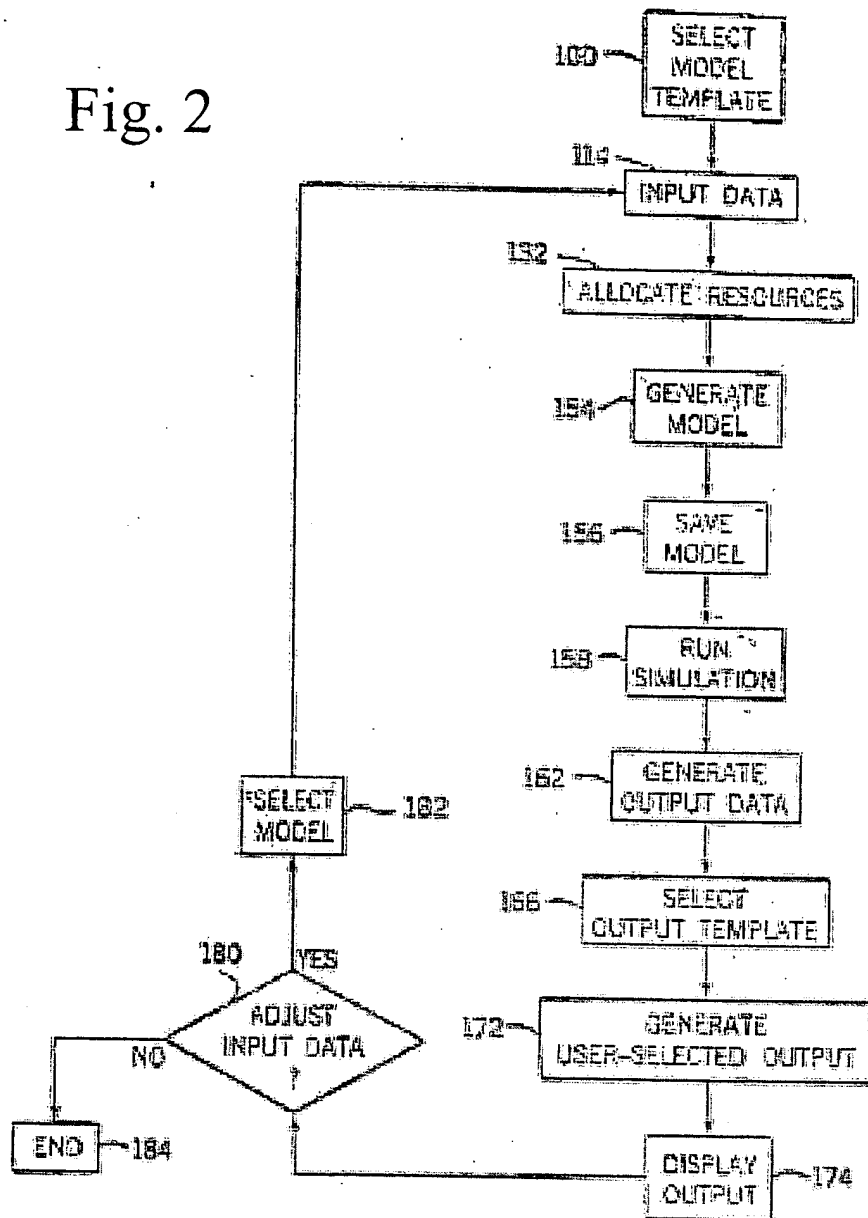


Fig. 2



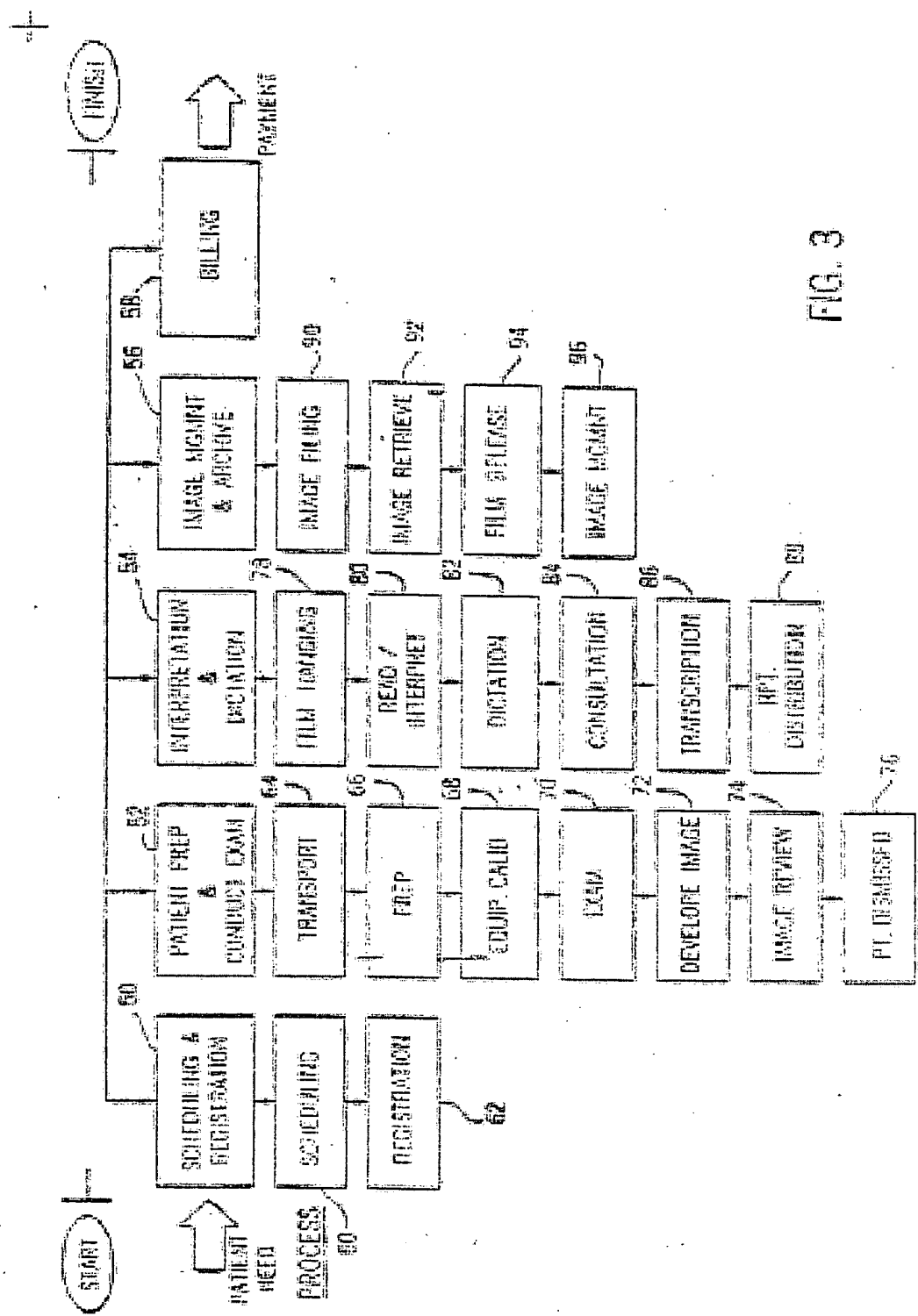
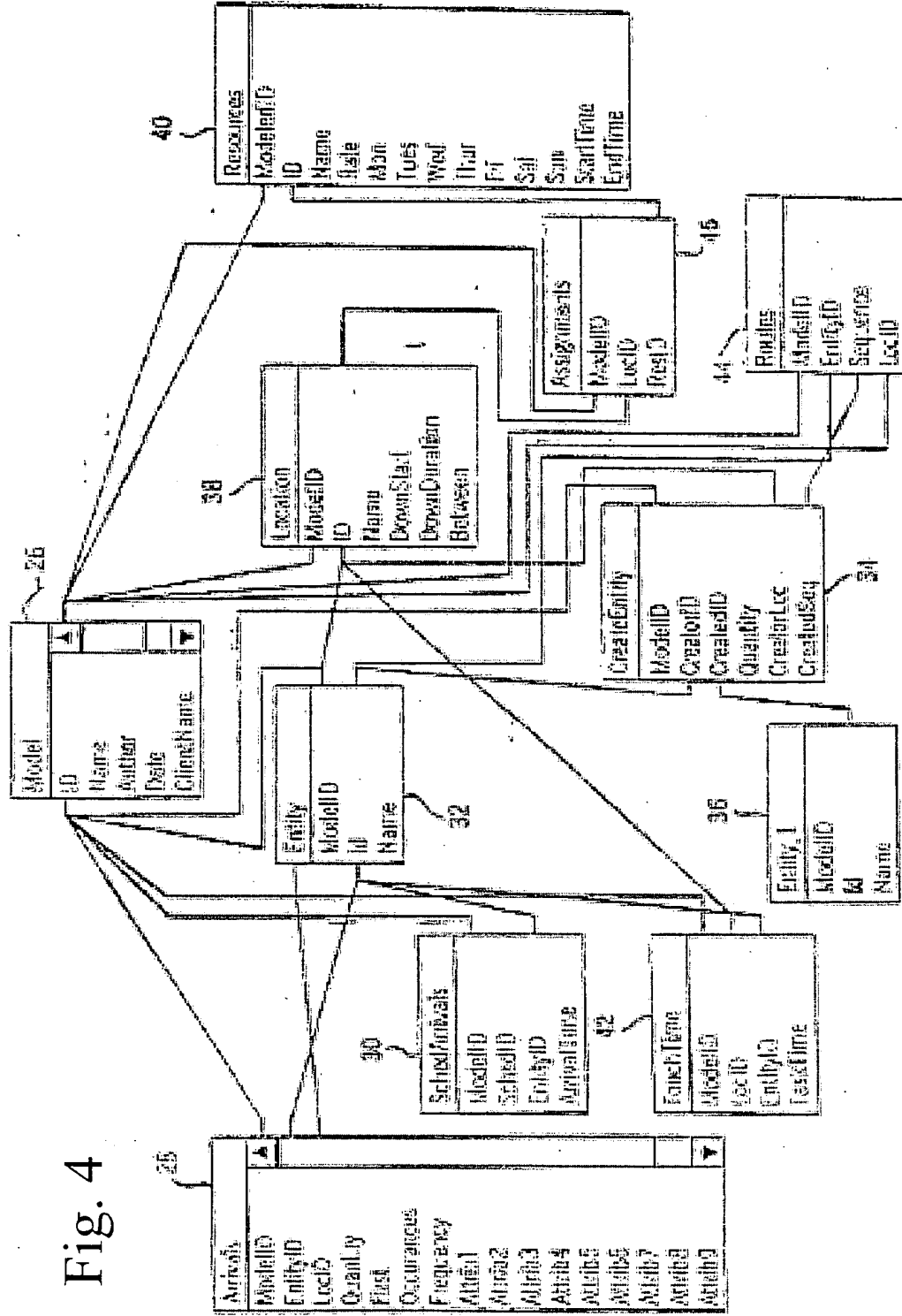


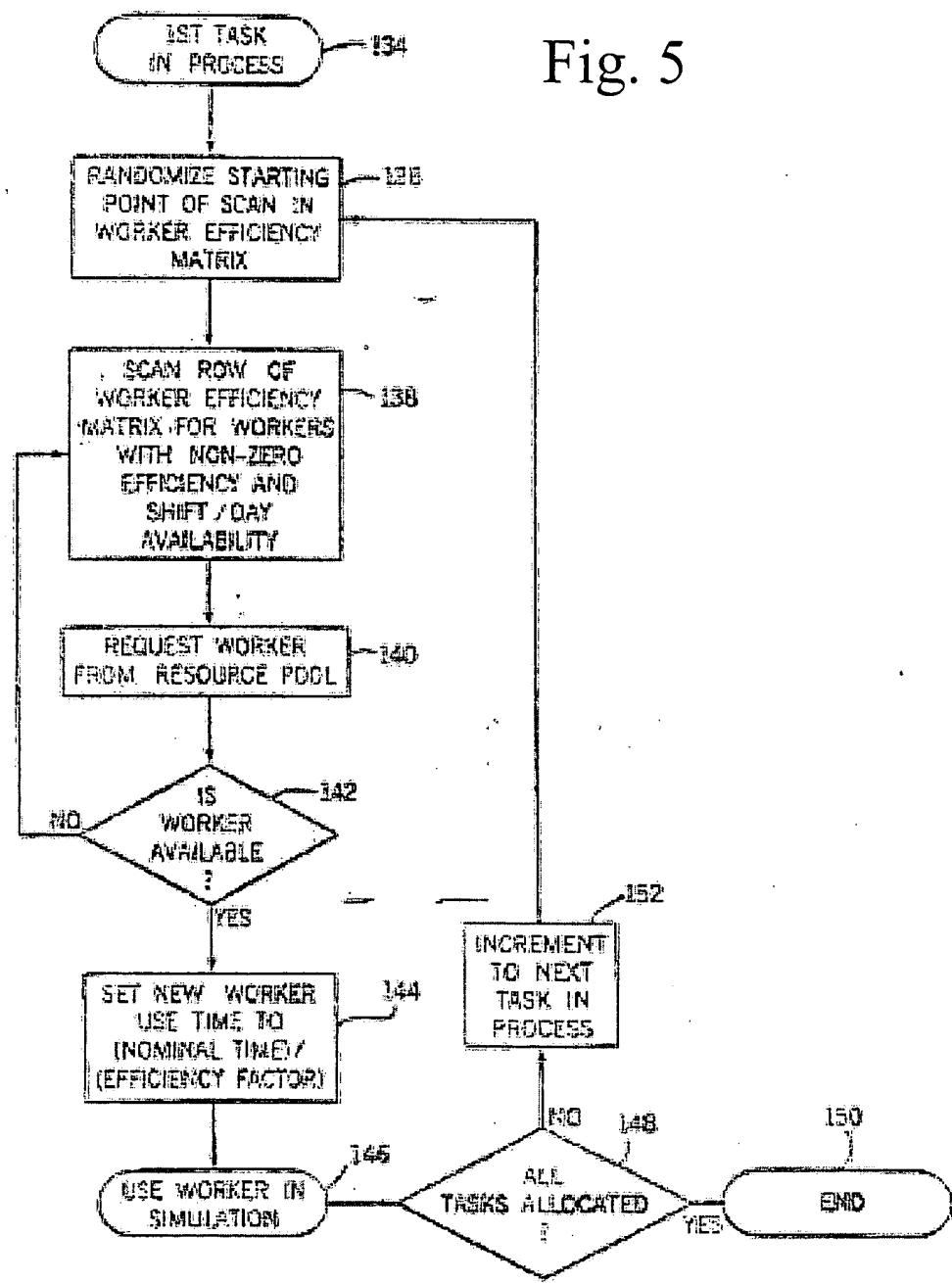
FIG. 3

Fig. 4



+

Fig. 5



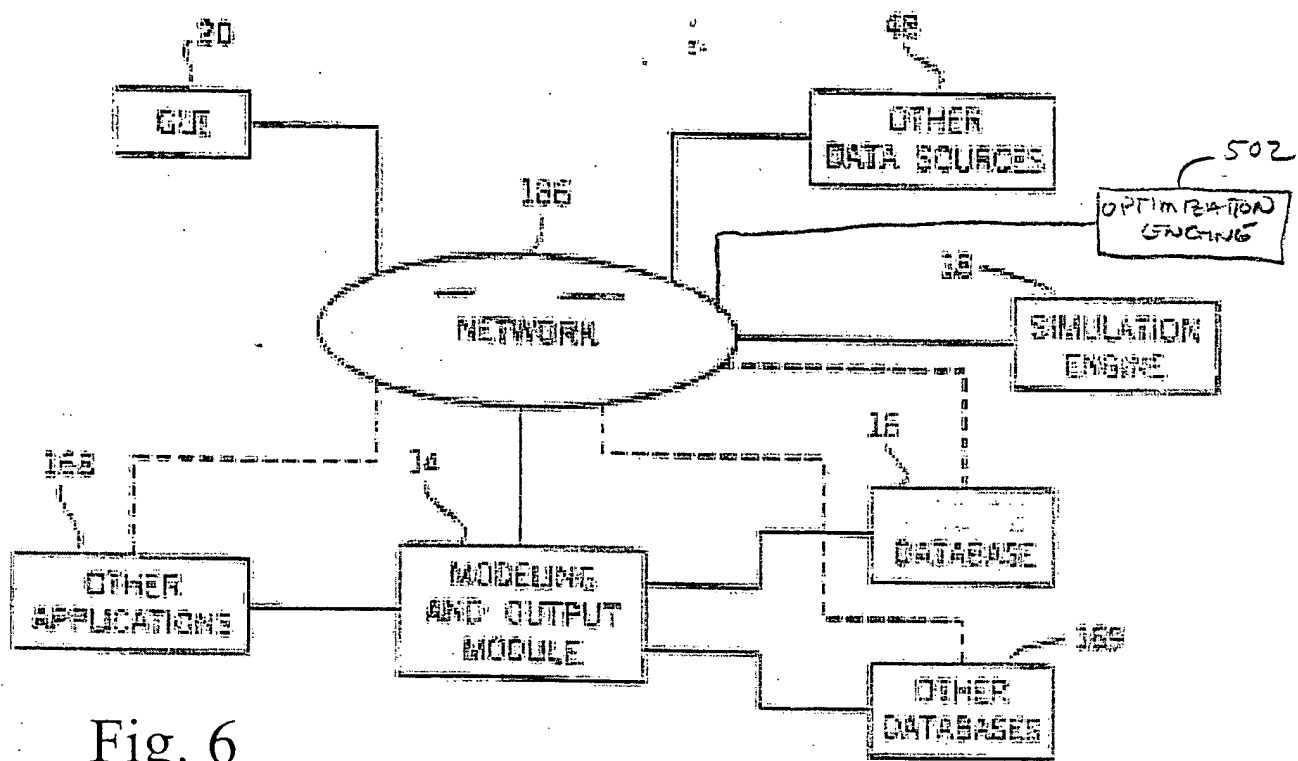


Fig. 6

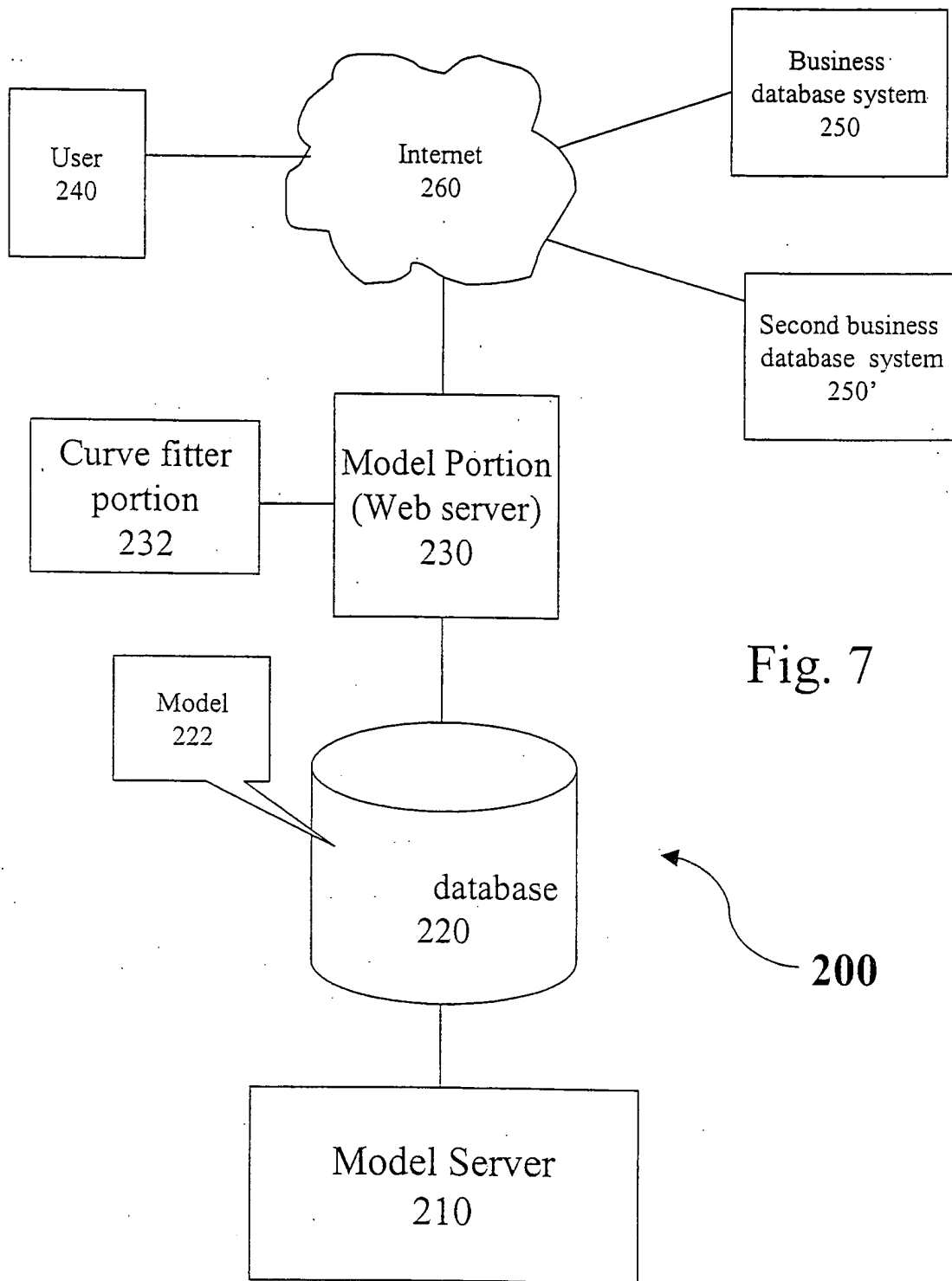
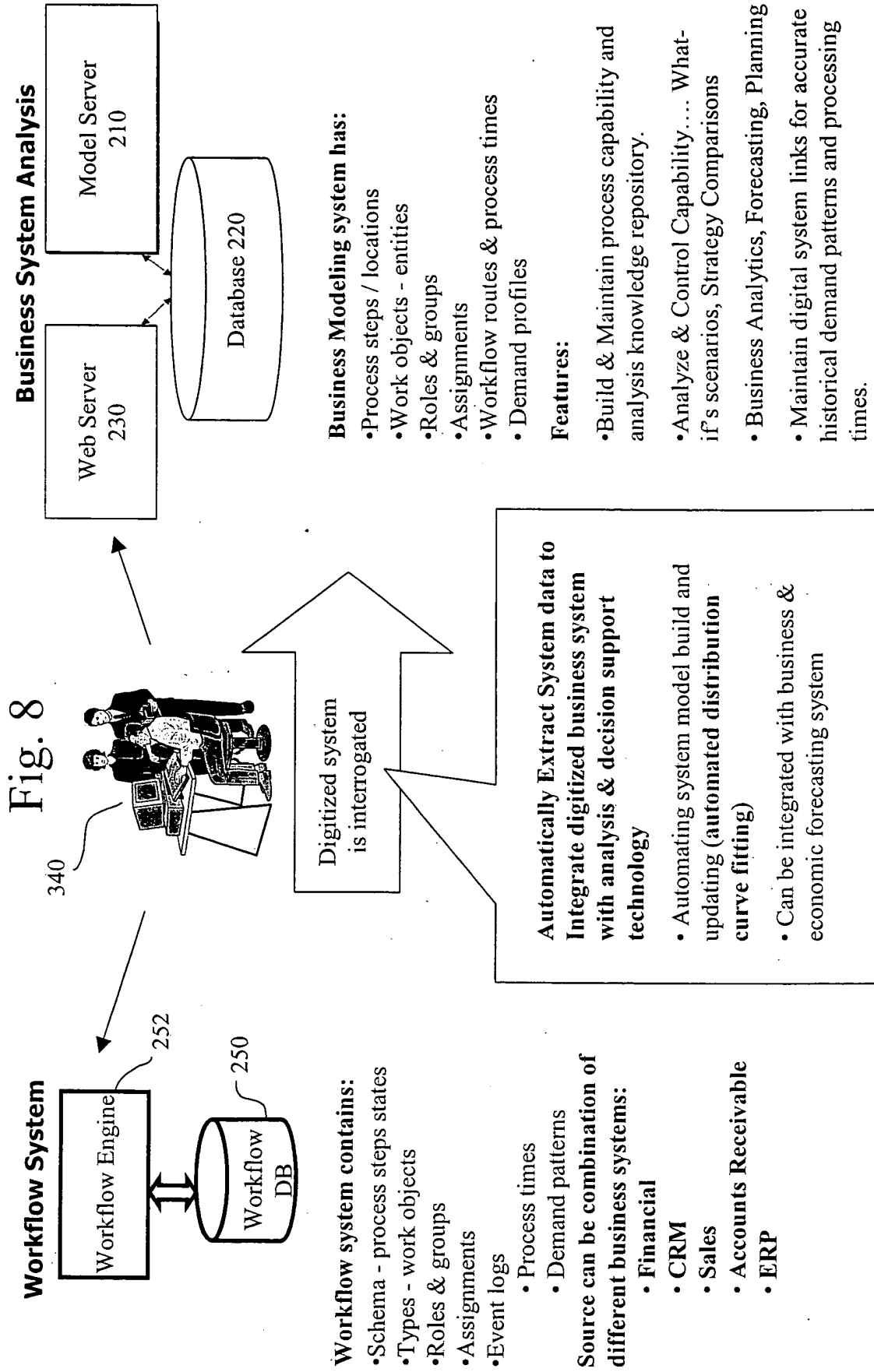


Fig. 7





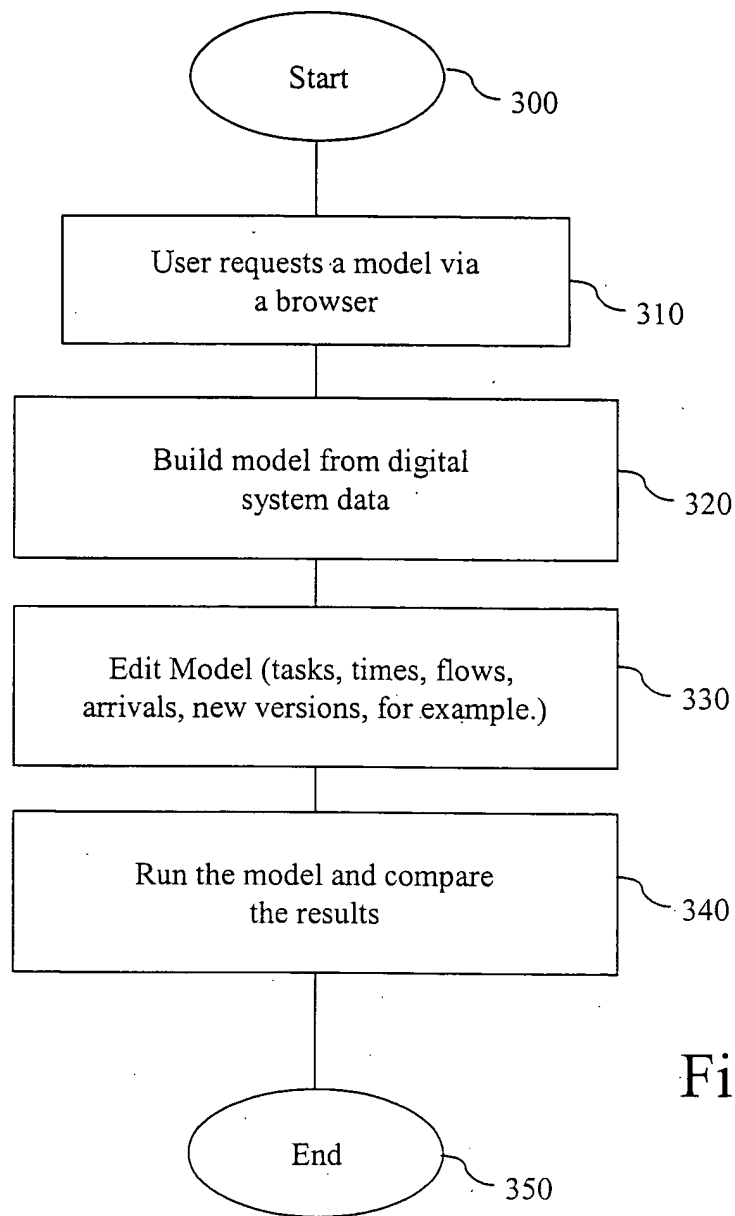


Fig. 9

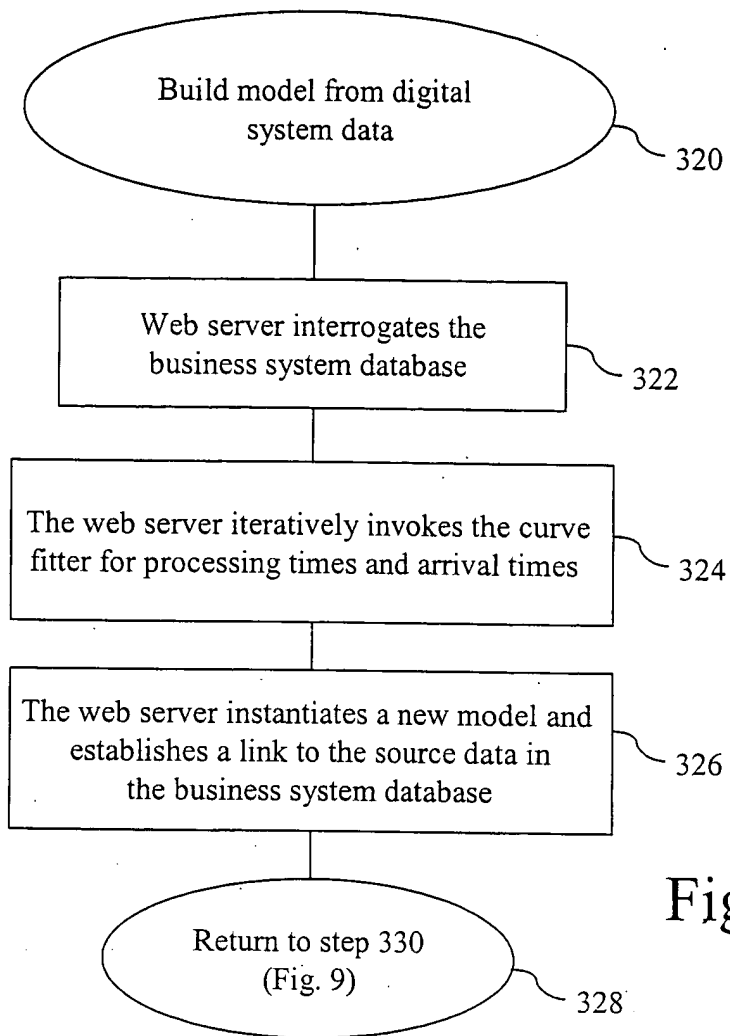


Fig. 10

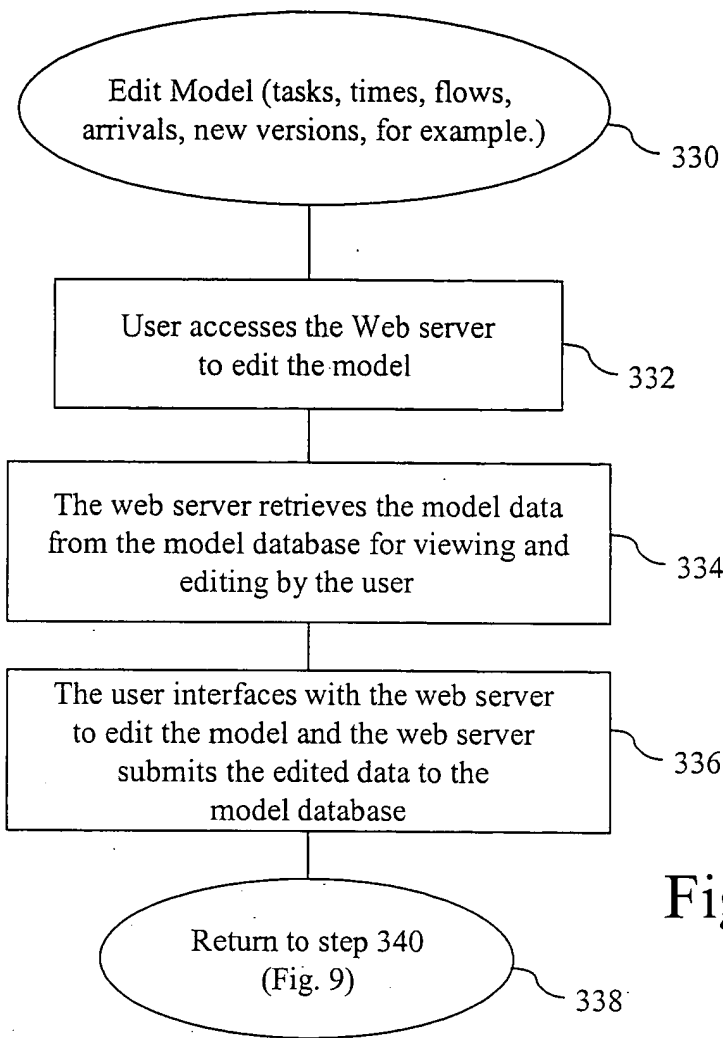


Fig. 11

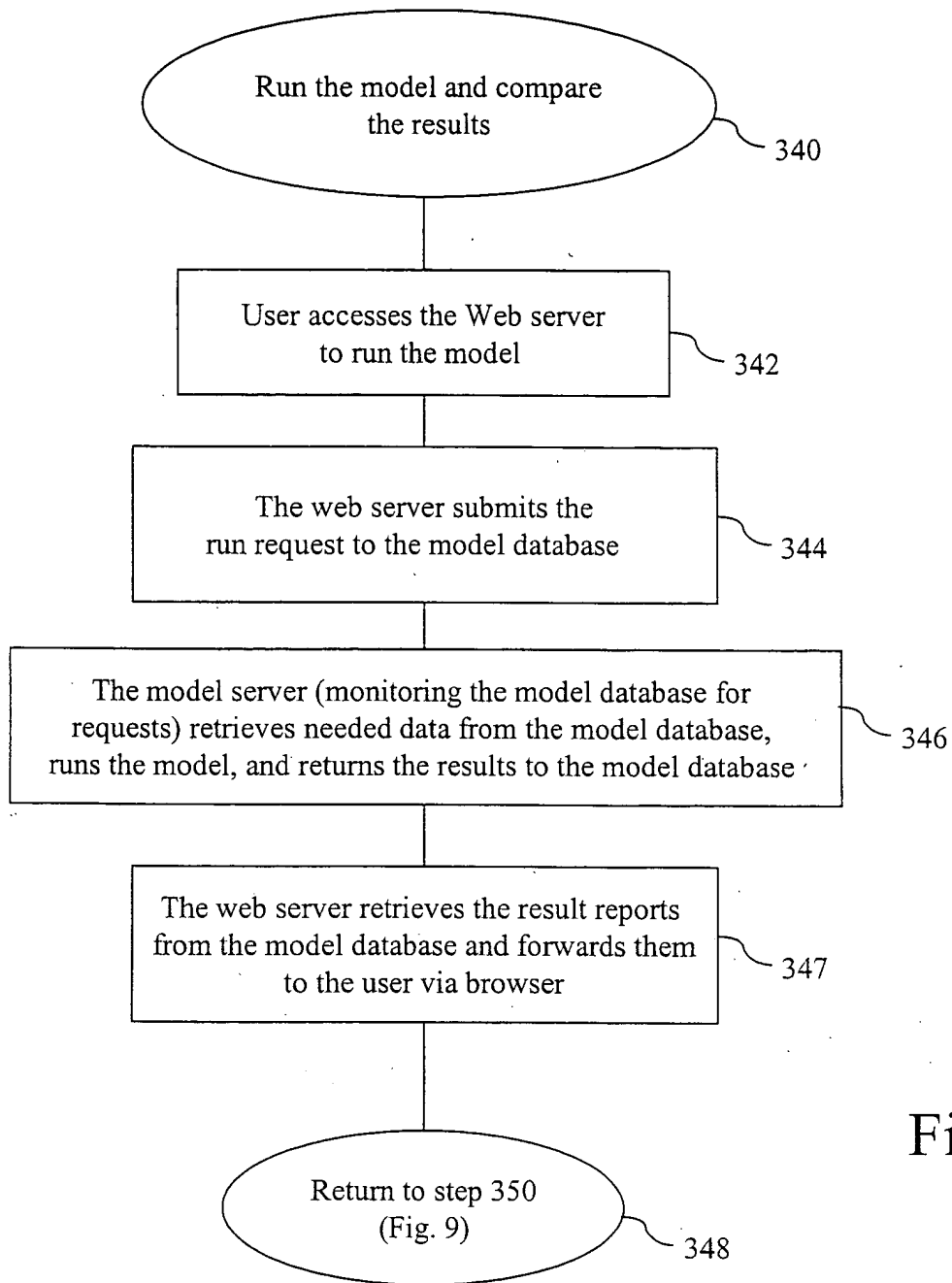


Fig. 12

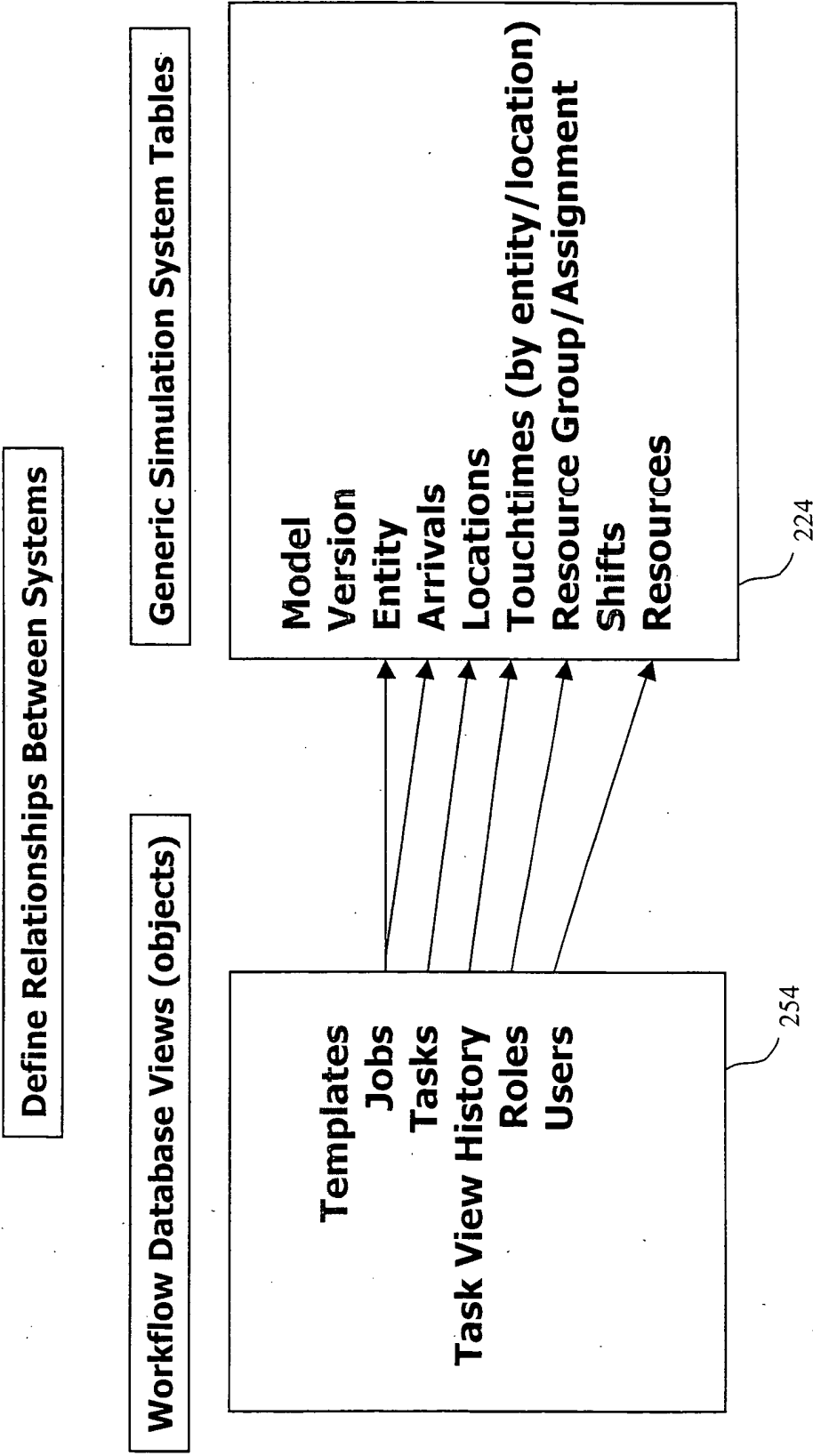


Fig. 13

# Automated Curve Fitter

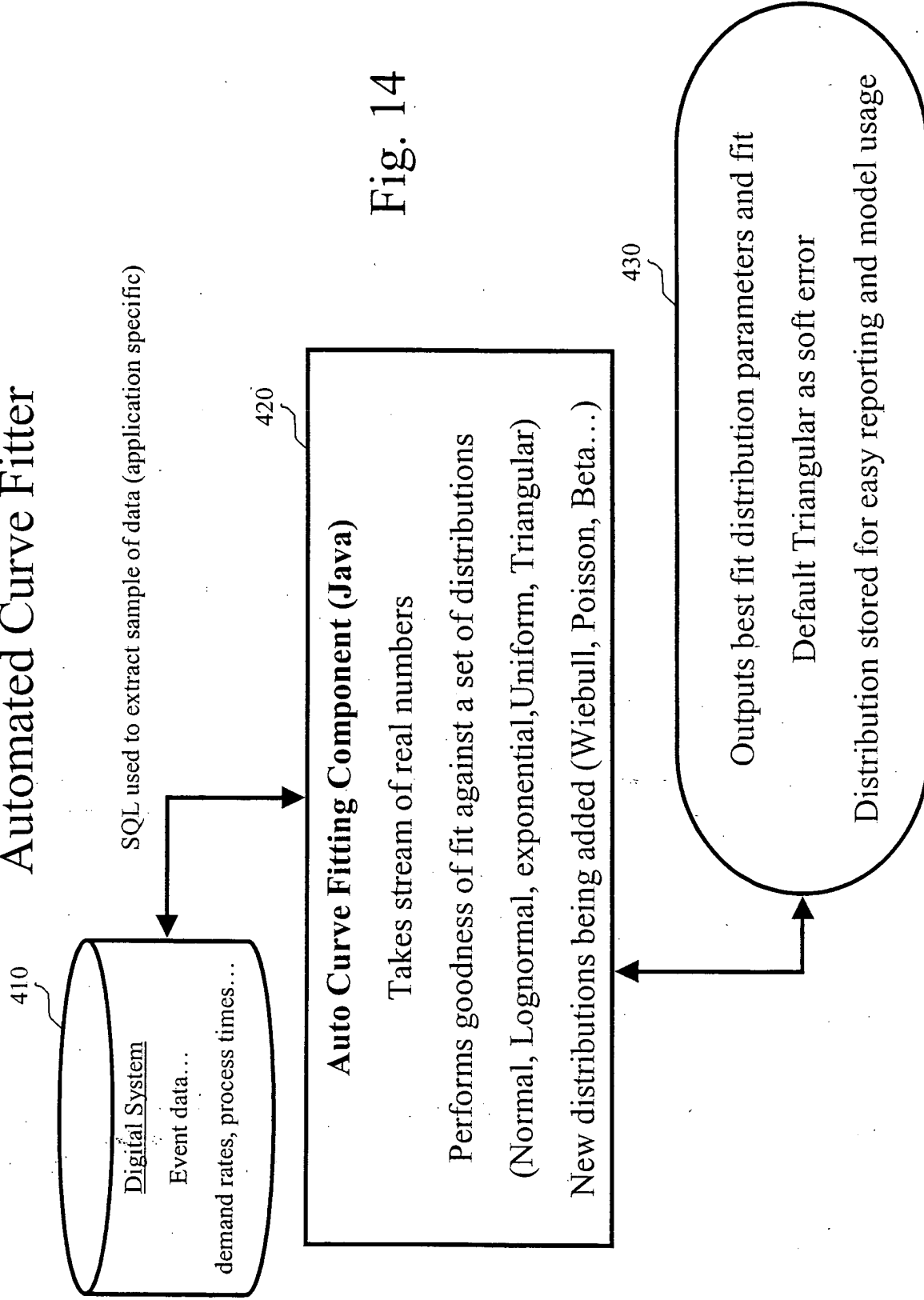


Fig. 14

Task	Job 1	Job 2	Job 3	Job 4	Job 5
1	30		20	30	25
2	7	15	35	54	10
3		5	42	120	
4	100	60		165	80

**Curve Fitting**

Task	Job 1	Job 2	Job 3	Job 4	Job 5
1	U(30,5)		T(15,27,40)		U(30,5)
2	T(5,7,10)	U(30,5)	T(50,57,70)	T(50,57,70)	T(5,7,10)
3		U(30,5)	T(5,7,10)		
4	U(90,25)	T(5,7,10)		U(30,5)	U(90,25)

Fig. 15



Process steps 310, 332, 342

How does this tool help?

See a Demo

[Click here to find out](#)

[View a real case scenario using CT/MR Optimizer](#)

The Generic Business System Process Modeling System allows process owners and quality leaders the ability to test their business system's performance under a variety of conditions. This WEB based dynamic modeling technology will allow businesses to construct and save a variety of business system workflow alternatives and test system performance under a broad range of conditions.

Below are listed the models and templates currently defined in the system.

Select either an existing model (to modify) or a template (new model creation) and a version number to proceed to the next step.

**COMING SOON** - Models may be created and updated from digital workflow system such as TIBCO and eMatrix. This will allow more accurate process time and arrival rate distributions to easily and automatically be incorporated into your business critical process simulations.

Preliminary version

Click to generate model from workflow data

Model List	Version	Template List	Version	View	Create New Model
Mays New Model with right sequence Mei2	1 2	CT_Template			
Z-EC ScanIndexFieldsPR testEURO claims build					
Model Description					
Testing workflow model create					

Fig. 16

Auto Generate a process model based on historical workflow data

Generated list of workflow

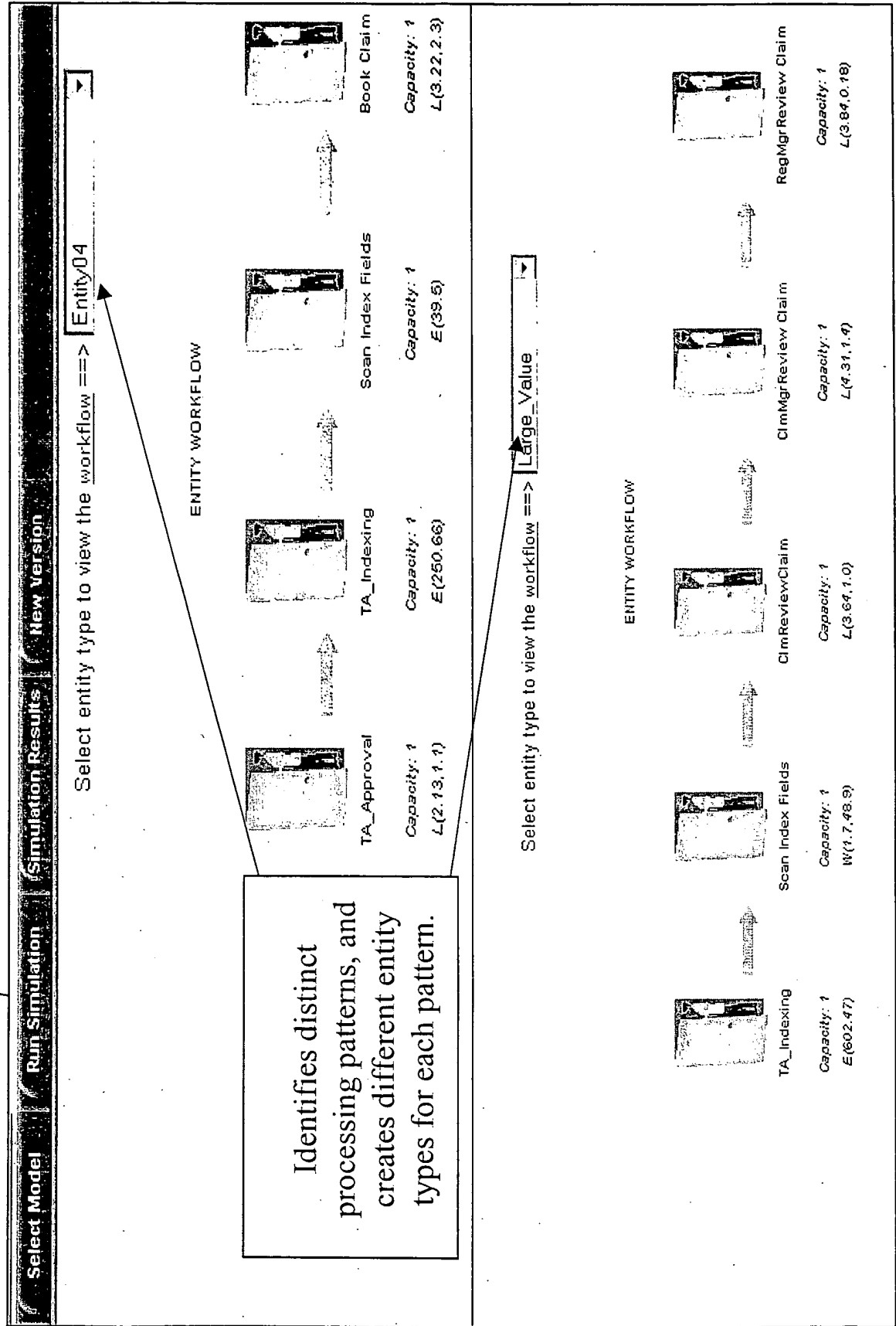
<p>Select a workflow:</p> <table><tr><td>CA_CashAlloc_WorkFlow</td></tr><tr><td>EB_DealApproval</td></tr><tr><td>EC_ScanIndexFields</td></tr><tr><td><b>EC_ScanIndexFieldsPR</b></td></tr><tr><td>ERC_ADMIN_TEST_EDM_START1</td></tr><tr><td>TAC_ACCOUNTING_PD</td></tr><tr><td>TAC_BORDEREAUX_PD</td></tr><tr><td>TAC_FACBOOKING_PD</td></tr><tr><td>TAC_XLBOOKING_PD</td></tr><tr><td>UKCLAIMS_SETUP</td></tr></table>	CA_CashAlloc_WorkFlow	EB_DealApproval	EC_ScanIndexFields	<b>EC_ScanIndexFieldsPR</b>	ERC_ADMIN_TEST_EDM_START1	TAC_ACCOUNTING_PD	TAC_BORDEREAUX_PD	TAC_FACBOOKING_PD	TAC_XLBOOKING_PD	UKCLAIMS_SETUP	<p>Specify a unique name for the new model:</p> <p>Z-EC_ScanIndexFieldsPR</p>
CA_CashAlloc_WorkFlow											
EB_DealApproval											
EC_ScanIndexFields											
<b>EC_ScanIndexFieldsPR</b>											
ERC_ADMIN_TEST_EDM_START1											
TAC_ACCOUNTING_PD											
TAC_BORDEREAUX_PD											
TAC_FACBOOKING_PD											
TAC_XLBOOKING_PD											
UKCLAIMS_SETUP											
<p>Give a description of the new model</p> <p>Testing workflow model create</p>											
<p>Select the time period of the workflow you are interested in (format=MM-DD-YYYY):</p> <p>From: 01-01-2001 To: 04-01-2001</p>											
<p><input type="checkbox"/> Show detailed output</p>											
<p>Create Model Close</p>											

Process step 320

Fig. 17

Process steps 330, 334

Fig. 18



Model elements can easily be added and edited

Model Id	Model Name	Version
211	Z-EC_ScanIndexFieldsPR	1

Model information page; Only name, version number and description can be updated using this page. This page should be accessible from any point in the modeling process. This page should appear when a model is loaded from the database. You can select models from the database.

Model name:	Z-EC_ScanIndexFields	Version number:	1
Number of <u>entities</u>	8	Number of <u>arrivals</u>	0
Number of <u>resources</u>	0	Number of <u>resource groups</u>	0
Number of <u>process steps</u>	10	Number of <u>assignments</u>	0
Number of <u>workflows</u>	32	Last modified <u>Scheduled Arrivals</u>	

You can edit the model description or create another model using this model as a starting point or template by changing the name or version number and pressing the update button. This will create a new instance of the model that you can make changes to while saving the current model for future reference.

Model description: Testing workflow model create

Update Done

Process step 336

Fig. 19

Edit entities (add, delete and change names)

Build list of system entities :

Add new entities to the list or change the name of an entity in the list.

Model Id	Model Name	Version
211	ZIEC_ScanIndexFieldsPR	1

Entity/03  
Entity/04  
Entity/05  
Entity/06  
Rejected\_ByReview

Model Info

Add New Change Name

Delete

Apply Done

Process step 336

Fig. 20

Process step 336

Edit resources (add, delete, schedule and change names)

Model Id	Model Name	Version
211	Z-EC_ScanIndexFieldsPR	1

Build a list of system resources : Add new resources to the list or change a resource in the list.	Set resource Schedule CAN THIS BE DONE WITH A GRAPHIC CONTROL?
<div>Name: DataEntry_1</div> <div>Cost per Hr: 0</div> <div>Add New Update</div> <div>DataEntry_1</div> <div>Delete</div>	<div>Scheduled Days: <input checked="" type="checkbox"/> Monday <input checked="" type="checkbox"/> Tuesday <input checked="" type="checkbox"/> Wednesday <input checked="" type="checkbox"/> Thursday <input checked="" type="checkbox"/> Friday <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday</div> <div>Scheduled Hours: From: 8 00 AM To: 5 00 PM</div> <div>FirstShift</div> <div>Add New Schedule</div> <div>Apply Delete</div>

NOTE: Schedules should be defined for both resources and operations or tasks on this page. Schedules can be selected and assigned to process steps on the process step page. Define schedules to reflect the actual availability of the resources and tasks.

ModelInfo

Apply Done

Fig. 21

Group resources for task assignments

Model Id	Model Name	Version
203	Claims	2

Place resources into groups based on the tasks that they will perform.

Data Entry 1  
Data Entry 2  
ADJ1  
ADJ2  
ADJ3

Group Name: Adjudicate  
Add Group  
Update Group

Data Entry  
Adjudicate  
Delete

Model info

Apply Done

Process step 336

Fig. 22

Model Id

Model Name

Version

203

Claims

2

Define jobs that individuals in this resource group can perform in this model.

Assign first working step in job:

At step:

Data Entry

How many of this resource?

1

Resource Group:

Data Entry

Assign last working step in job:

Works until step:

Data Entry

(then resource is released for other jobs)

Save this job definition

Model info

Current Job Assignment List

At Data Entry, 1 Data Entry works until task at Data Entry is completed

Remove job defi

Apply

Group resources for task assignments

Process step 336

Fig. 23



Process steps (add, delete and modify)

Model Id	Model Name	Version
211	Z-EC_ScanIndexFieldsPR	1

Build a list of system process steps : Add new process steps to the list or change a process in the list.

Name: Scan Index Fields use 0	capacity: 1	cost per
Add Before	Add After	Change Selected
<div>TA_Indexing</div> <div>Scan Index Fields</div> <div>ClimReviewClaim</div> <div>ClimMgrReview Claim</div>		
		Delete
Set Process Downtime: Set Downtime		
First Time: 0		
Duration: 0		
Time Between: 0		

Model info

Apply Done

Process step 336

Fig. 24

Change arrival patterns (Number & frequency)

Model Id	Model Name	Version
203	Claims	2

Arrivals describe the entry pattern of entities into the business process from an external source.

Entity	Arrives at Process Step	Qty. Each	First Time	Occurrences	Frequency
SL Claim	Arrival_Q				

Add Arrival	Update	Del Arrival
-------------	--------	-------------

SL Claim At Arrival_Q 15 0 INF 168 HR
SL Claim At Arrival_Q 15 24 INF 168 HR
SL Claim At Arrival_Q 15 48 INF 168 HR
SL Claim At Arrival_Q 15 72 INF 168 HR
SL Claim At Arrival_Q 15 96 INF 168 HR

Model info

Apply	Done
-------	------

Process step 336

Fig. 25

Change process flow and processing times with the workflow screen

Model Id	Model Name	Version
211	Z-EC_ScanIndexFieldsPR	1

Build Workflow for Entity:

Select a process step:

- TA\_Indexing
- Scan Index Fields
- CimReviewClaim
- CimMgrReviewClaim**
- RegMgrReview Claim
- CimLeaderReview
- Book Claim
- TA\_Approval
- Close Sleep
- UWComments

Enter the processing Time:

L(4.31.1.4)

Update

Workflow generated time distributions:

Set Time

Add Before

Add After

Delete

Copy

TA\_Indexing E(602.47)

Scan Index Fields W(1.7.48.9)

CimReviewClaim L(3.64.1.0)

**CimMgrReview Claim L(4.31.1.4)**

RegMgrReview Claim L(3.84.0.18)

Entity03

Copy and u

workflow.

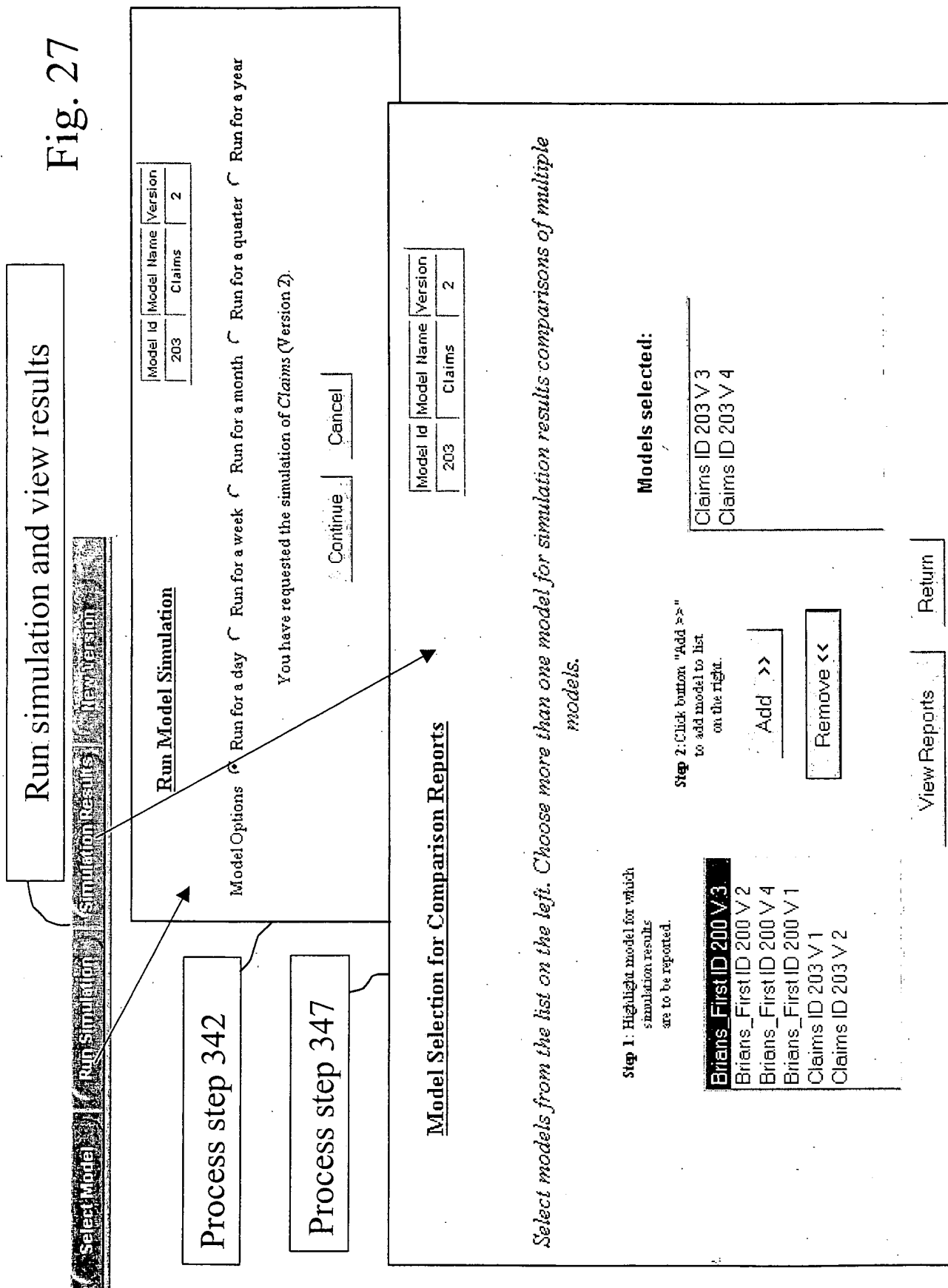
Model Info

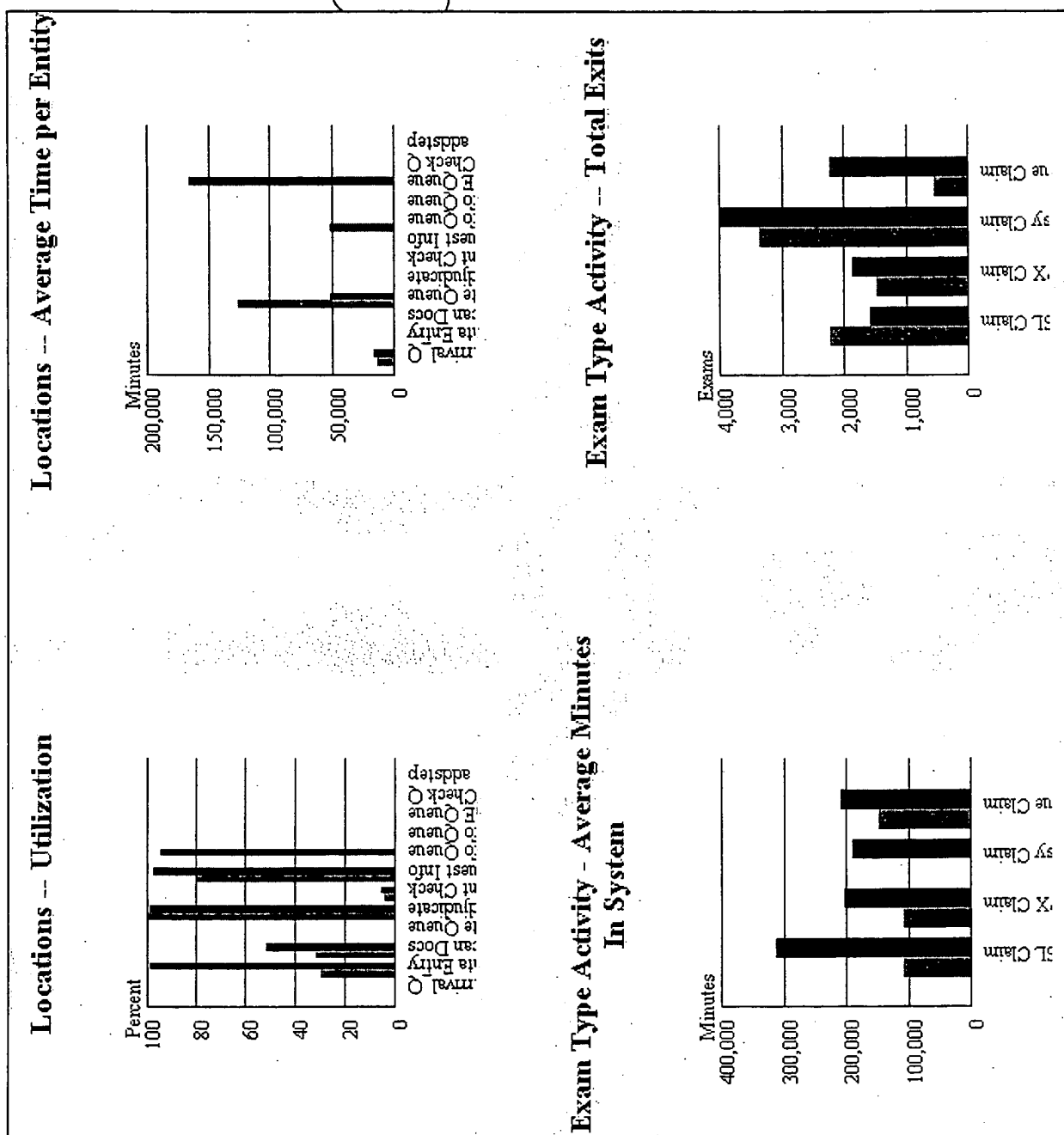
Apply Done

Process step 336

Fig. 26

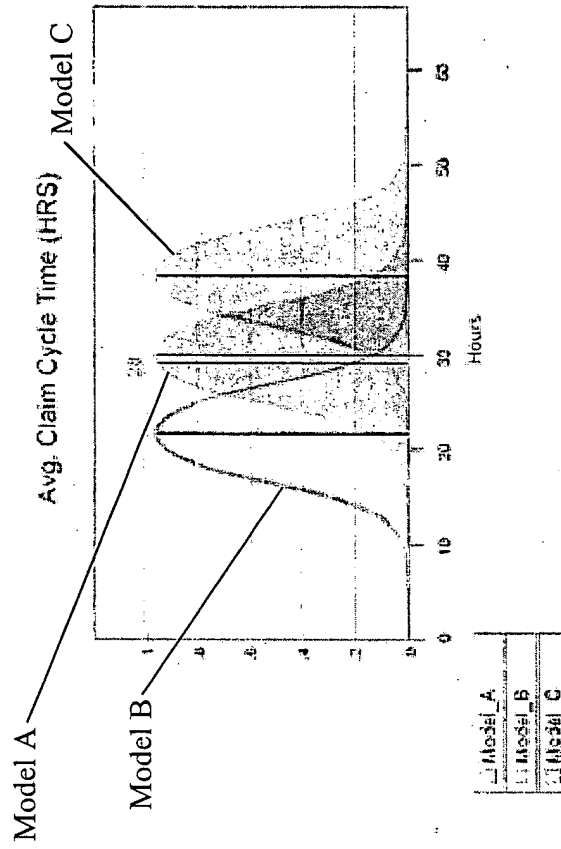
## Run simulation and view results





## Entity Cycle Time report

This report communicates the average time a work object spends in your system. The data being displayed represents the range of possible results given the input assumptions for your business system. The variability in the models result is function of the variability and interdependencies of the various model input assumptions (arrival rates, resource availability, processing times...).



Process step 347

Fig. 29

## Generic Model Data Structure

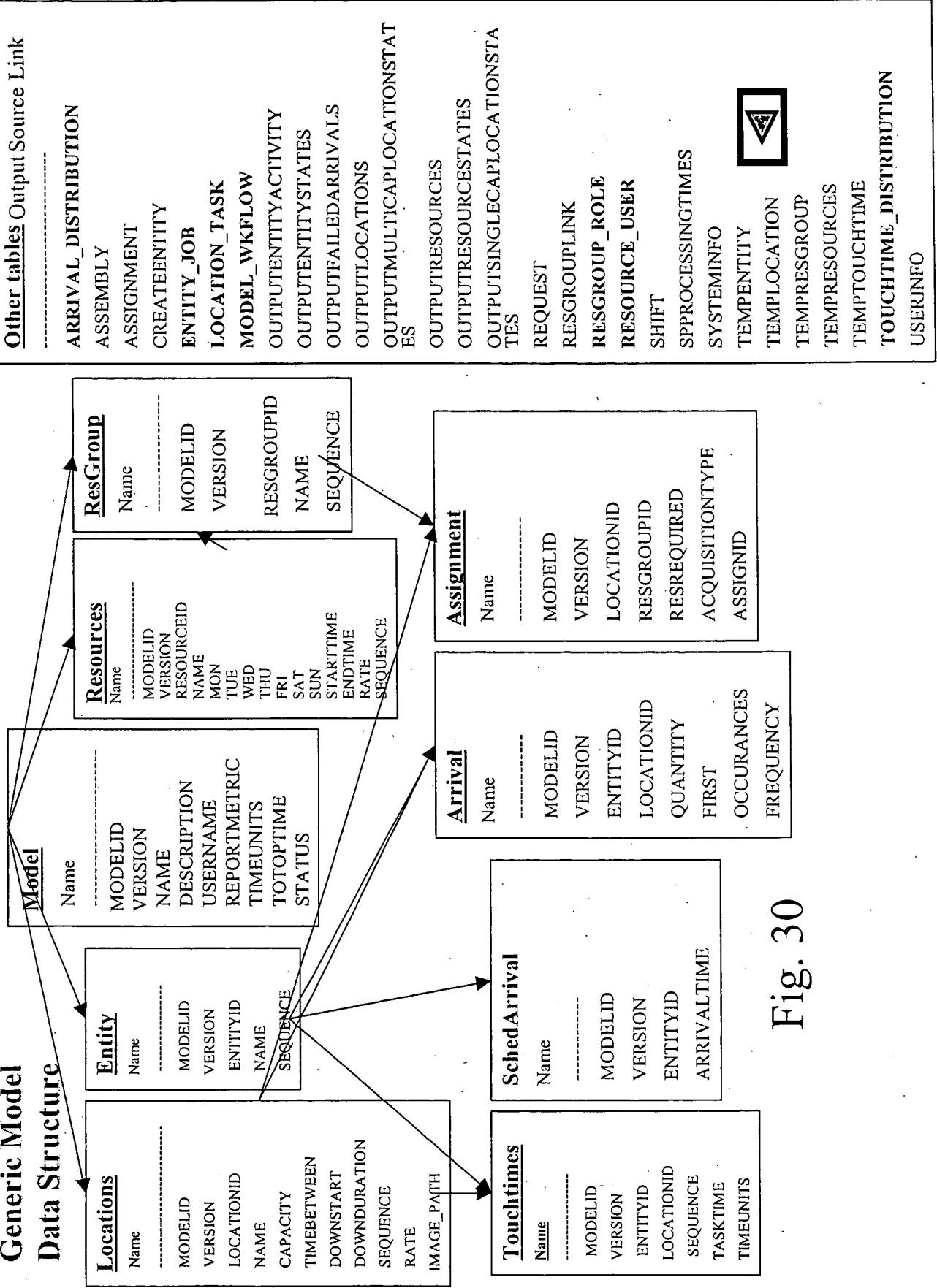


Fig. 30

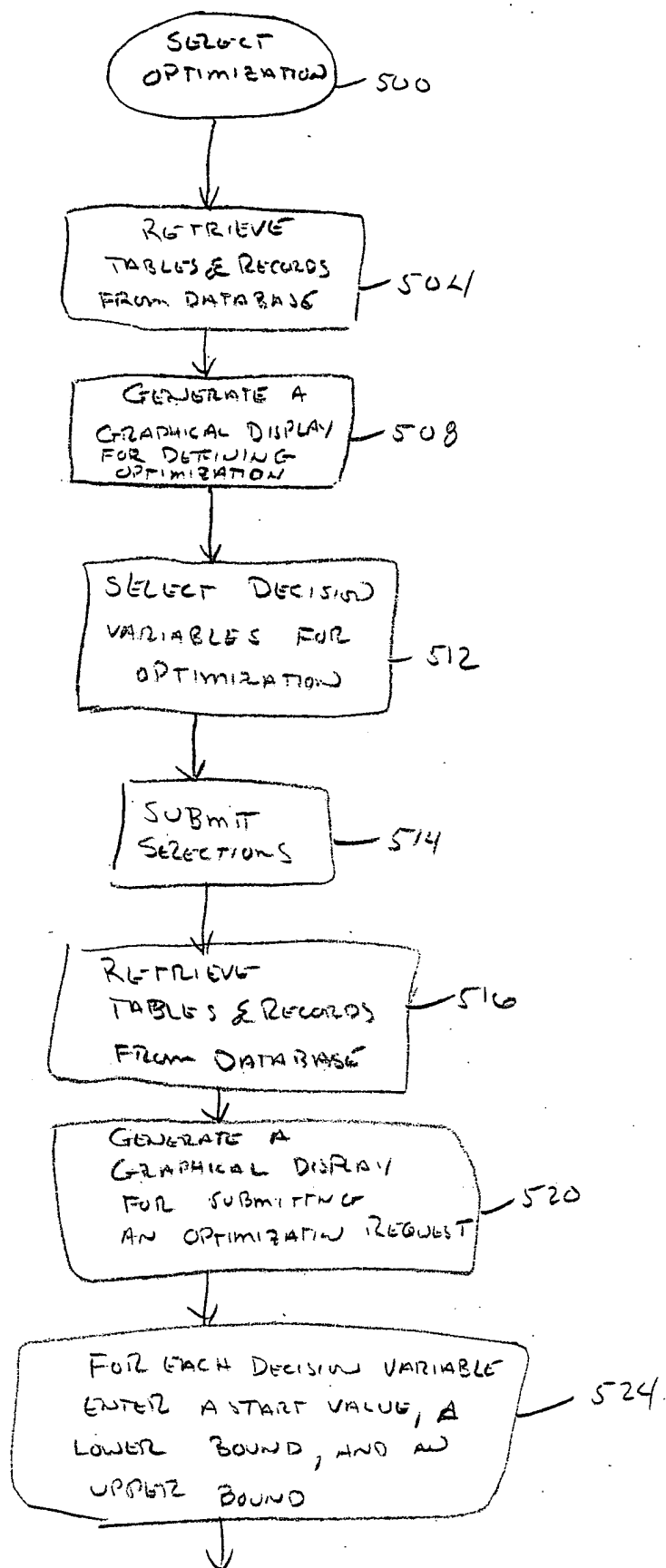


FIG. 31A



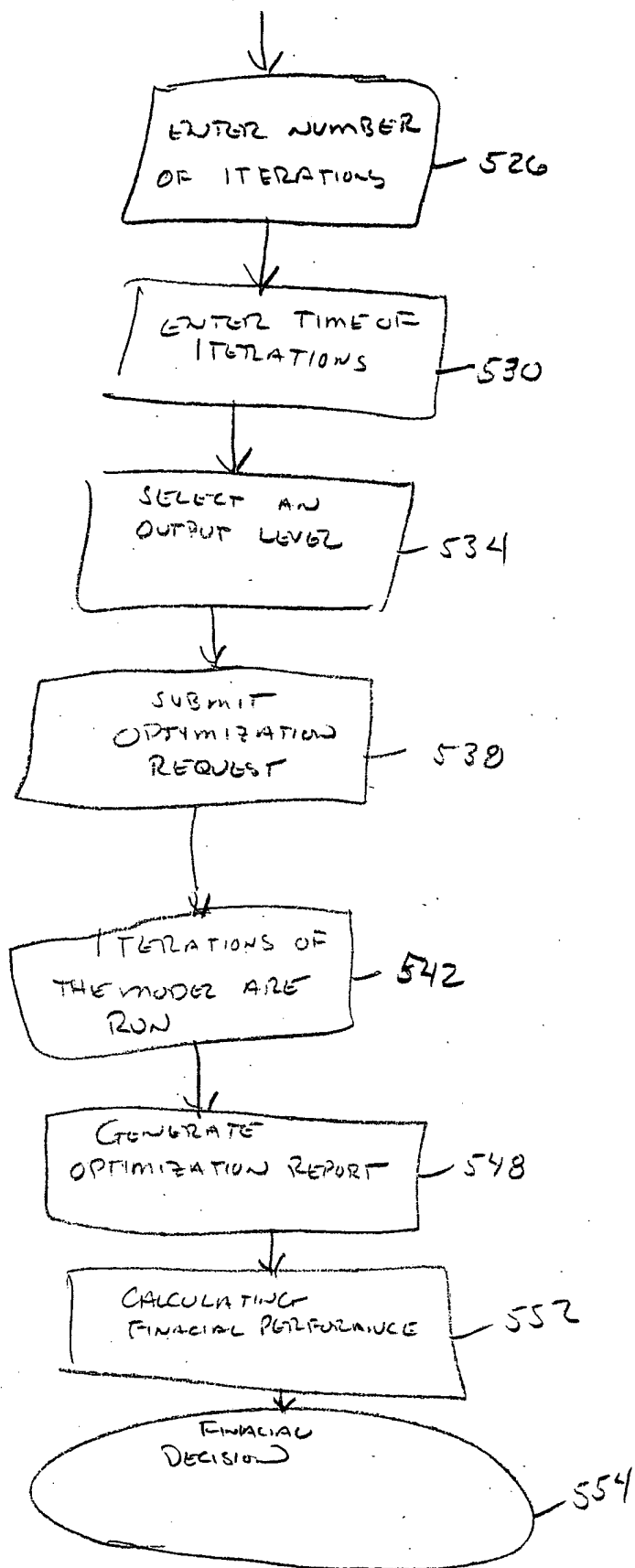


FIG. 31 B

Process steps 512, 514

Define Optimization for a Simulation Model - Microsoft Internet Explorer

Define a New Optimization

Simulation model: Model

Version: 2

Optimization id: 602

Optimization direction: Maximize

Optimization name:

Object function: Utilization rate

Chose decision variables for arrival

510

Decision variable	Entity name	Location	Initial quantity
<input type="checkbox"/>	Van_53_Orders	Order_queue	1
<input type="checkbox"/>	Van_53	Ready_pool	120
<input type="checkbox"/>	Van_48_Orders	Order_queue	1
<input type="checkbox"/>	Storage	Ready_pool	45
<input type="checkbox"/>	Storage_Orders	Order_queue	1
<input type="checkbox"/>	Reffer	Ready_pool	5
<input type="checkbox"/>	Reffer_Orders	Order_queue	1
<input type="checkbox"/>	Flatbed	Ready_pool	63
<input type="checkbox"/>	Flatbed_Orders	Order_queue	1
<input type="checkbox"/>	Van_48	Ready_pool	185

SUBMIT

515

499

FIG. 32

Process steps 524, 526, 530, 534

Submit An Optimization Request - Microsoft Internet Explorer

### Submit Optimization Request

Simulation model: Model Version: 2 Optimization: Test

Objective function: Utility Rate

Define parameters for decision variables

Entity Name	Location	Start Value	Lower Bound	Upper Bound
Van_53	Ready_pool	160	140	180
Van_48	Ready_pool	80	60	100

Optimization stop criteria

Number of iterations: 100

Time of iterations: 200 minutes

Output level

☒ Best solution only ☐ All current best solution ☐ Best solution every  iterations

☒ 536

☐ 532

☐ 528

☐ 540

☐ 522

☐ 518

Process step 540

540

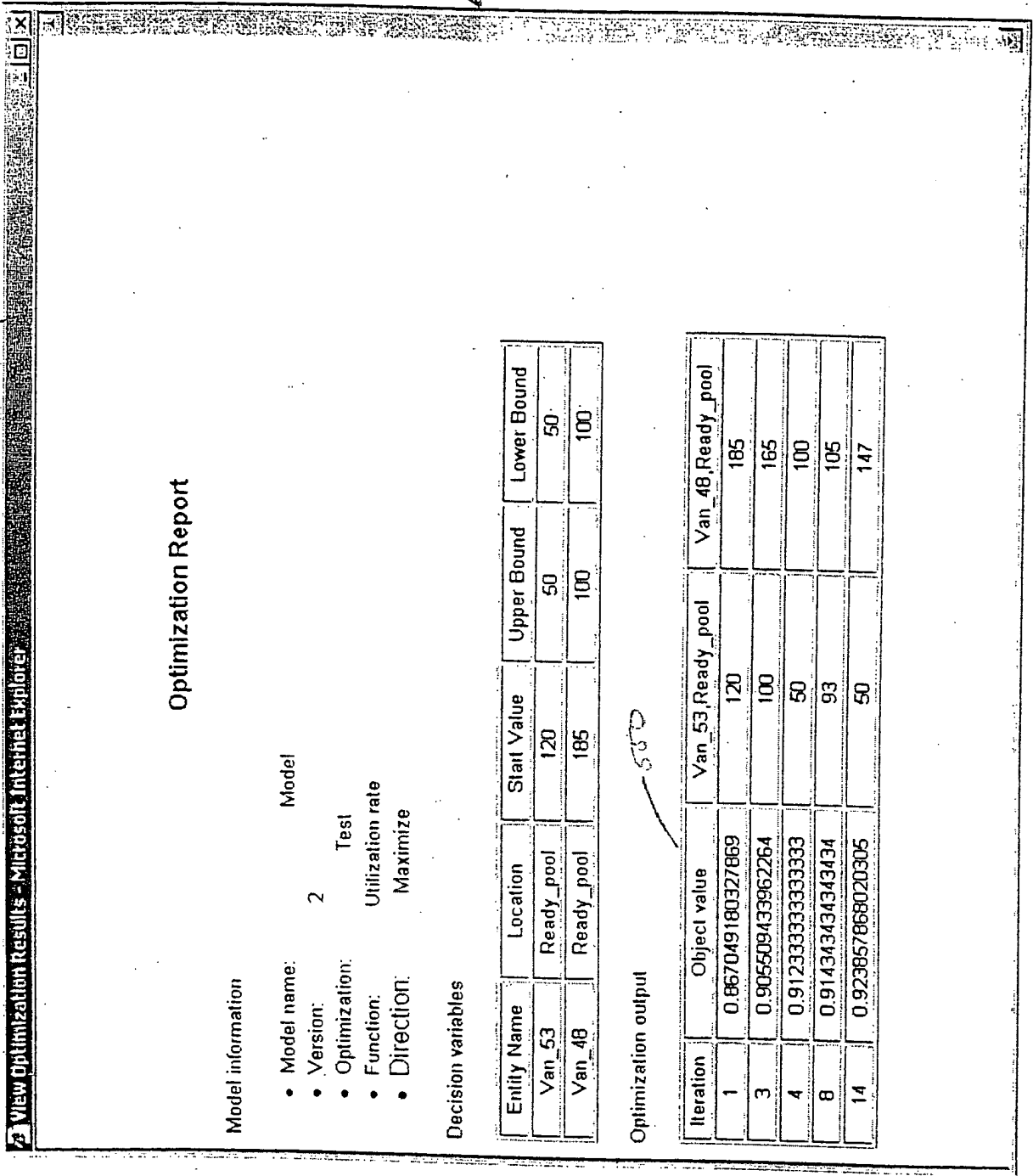


Fig. 54

Process step 552

53" van	48" Van	Utilization	Average units on rent	total rental days a year (365 days)	revenue from rental day (\$15)	Cost associated with changes in portfolio, maintenance?	Net Unit Delta	Revenue change
120	185	0.867	264.435	96518.775	\$1,447,782		305	\$1,447,782
113	163	0.889	245.364	89557.86	\$1,343,368		-29	(\$104,414)
50	100	0.912	136.8	49932	\$748,980		-155	(\$698,802)
60	167	0.917	208.159	75978.035	\$1,139,671		-78	(\$308,111)
55	134	0.922	174.258	63604.17	\$954,063		-116	(\$493,719)

FIG. 35